Man an Indestructible Atom.
[*Abstract.*]

This was a suggestive paper laying down the following hypothesis: It is conceivable that there may exist in the human skull an atom to which all the forces of sensation are directed, and from which flow all the motor forces, also that there may be superadded to it a superior organ—the brain, which receives the sensations, evolving thought and other complex phenomena. It was suggested that this atom might exist while the individuality existed, and that at death, by process of the chemical forces, it would be freed, until certain fixed external conditions of matter allowed it to be re-evolved. Thus the human being was, according to this author, reduced to an indestructible sensitive atom; when evolved, the visible parts, as the trunk and its viscera, the limbs, the brain, etc., being the instruments by which that atom received sensation, motion, and all the phenomena recognised in the human being. The hypothesis was enlarged to the whole organised creation, supposing this kingdom of matter to exist, as in the inorganic world atomically and indestructibly; while every atom would produce an individual when placed under proper external conditions, it will follow, that, tracing back geologically, those atoms which are capable alone of the lowest organisations, would be developed by direct means of the inorganic world, while the next higher order of atoms would be evolved into individuals by means of the next lower order, supposing, of course, the development of individuals to be subject to those slight variations described by Darwin and others. It would follow on this hypothesis that man was evolved—having existed always atomically,—by means of the next lower species, while the existence of the atom in the individual gives place to continuity of ideas. Mr. Hovenden supported his argument by bringing forward the evidence from chemical physics, comparative anatomy, and physiology.

The thanks of the meeting were given to Mr. Hovenden for his paper.

Mr. Pike remarked that if (as the author of the paper had suggested) vitality was seated in an atom at the base of the brain, all sensations would converge to it by conducting nerves; but no such convergence of nerves was observable in any part of the brain. There were no doubt nerves from various parts of the body to the brain, and conductors from one part of the brain to another, but these had not been found to converge to a single point. The theory of an indestructible something in man, though vague, was not new, and he did not think that Mr. Hovenden had explained anything by his paper.

Dr. Charnock said he could not conceive such a thing as a destructible atom.

Mr. A. L. Lewis concurred in the opinion that the vital principle was located in the base of the brain, but considered the paper unsatisfactory in several respects.

Dr. Carter Blake stated that he was at a loss to comprehend Mr. Hovenden's definition of life; of an atom; and of destructibility. He was unable to admit any other definition of a living thing than that which receives and assimilates external substances; and thought that

in such an important subject which affected the very foundation of anthropology, precise and accurate definitions should be given. He expressed his concurrence with Mr. Hovenden in his theory that heat was "matter," and not "force," but failed to understand his definition of an "individual." His definition might be good enough for man alone, but was not applicable to the lower forms of life. In them our ideas of individuality became complicated, and he adduced the tape-worm as an instance of numerous separate reproductive zoa on one scolex. With respect to the atoms spoken of by the author of the paper, Dr. Blake said it was difficult to understand what was meant by those atoms, whether or not he meant them to be reproductive germs, and the indistinctness on that part of the author's argument showed the importance of exact terminology, to the want of which the difficulty of understanding the author's ideas might, perhaps, be attributed. The subject of separate gemmules had been thoroughly worked out by Professor Owen and Mr. Herbert Spencer, and more recently by Mr. Darwin, in his theory of "Pangenesis." It was a theory, in fact, as old as science, and Mr. Hovenden scarcely threw fresh light on it. No cause had been assigned for fixing the locality of the assumed indestructible living atom in the head. There seemed to be no reason why it should not be seated much lower. The old Jewish Rabbis used to say that there was one part of the body which was indestructible (the bone Luz) and capable of reproducing the rest of the body at the day of judgment. The Jewish Rabbis, however, did not put that bone in the head, but in a very different part. In fact, it was the *os coccygis*.

Mr. Dendy said a great mistake appeared to have been made respecting Lamarck and Darwin, whose views were represented to be similar. Darwin's opinions and writings were often in opposition to the extreme doctrine of Lamarck. With regard to the terms atom and cell, there appeared to be some confusion. A monad might be atomic, a cell implies a globule vitalised; both were indestructible, they existed for ever in some form or other, for nothing that exists in nature ever dies. In that sense it might be said that man is indestructible.

Mr. Bendir considered that the theory put forth by the author of the paper depended to a great extent upon Darwin's theory, and that the arguments adduced in support of it, so far as he could understand them, were derived from Darwin.

Dr. Beigel stated that the paper had been placed in the hands of the Society before similar opinions by Professors Tyndall and Huxley had been presented of the latter author, and remarked that it seemed curious that Professor Huxley constantly taught materialist doctrines, and constantly denied that he was a materialist. Though he was much pleased with the paper, there were several points in which he differed from the author. It was stated that organic atoms, as well as inorganic atoms, were indestructible; now he confessed he (Dr. Beigel) could not conceive that theory. An organic atom meant the first appearance of life; and life could be destroyed in any form in which it appeared; therefore, if an organic atom were the lowest form

of life it could be destroyed. But inorganic atoms could not be destroyed. It was true that some combinations of matter, chemically called atoms, might be decomposed, but, strictly speaking, they could not be recognised as atoms. Again was the author correct in asserting that there is in some part of the brain an indestructible vitalised atom? He was sorry to say that that was not so, though it was true that all the vital powers are concentrated at the base of the brain. That fact was sufficient to overthrow the theory of phrenology. With respect to the Darwinian theory, he did not agree with it, for reasons which he detailed.

Dr. CHARNOCK and Mr. GOULD AVERY also took part in the discussion.

Mr. HOVENDEN, in replying to the remarks on his paper, adverted to the objections that had been taken as to the want of definition of the term atom, and said that the ultimate particles of elementary substances must be atoms, for it could not be conceived otherwise than that by continued divisions they would come to an ultimate individable particle of matter, and that must be an atom. There had been a confusion introduced as regarded atoms and cells. He held that a cell was a very highly organised molecule—an aggregation of atoms, and developed from a germinal spot. He granted that it must be fructified, but it was not for him to consider what power aided to cause reproduction. With regard to Darwin's theory, he held that his position was not antagonistic to Darwin's, but agreed therewith. He was of opinion that new species were produced in succession, and that man, as we now saw him, was but a highly developed savage.

Dr. BEIGEL then made a communication respecting the *Siamese Twins*, whom he had had the opportunity of examining thoroughly. He said they were two separate beings connected together by prolongation of the hypertrophied ensiform cartilage which formed a ligament from the breast-bone of each. Such a connection, with full development of two individuals, was very rare, and had only once been described, and that was in the sixteenth century. The twins now exhibiting were from Siam. They were in every respect two different beings. They were different in feeling, different in opinions, and different in health, and the only thing common to them was that they had been accustomed for fifty-eight years to act as a single individual. They moved in the same direction without telling one another, exactly as a single individual would do. As to feeling, one was sometimes ill and the other not, one was hungry and the other was not so, one was sleepy and the other was not, and one had certain natural desires to satisfy which the other did not feel, which at times was troublesome and disagreeable. Their band of connection was merely an elongated cartilage from the bone of the chest, which passed from one to the other. It was solid, not hollow; was about seven inches long, and of the thickness of an arm. There was a difference in their pulse amounting at times to five or ten pulsations in a minute. There was no communication between the thorax of one and the other, but when one was coughing it seemed as if something were protruding into the connecting band. The two individuals could move their limbs separately with ease; and one of them plays the violin, the other the flute. The

separation might, he thought, be easily made without danger, but they would not allow it, and did not desire it. The opinion of Sir J. Simpson and of other eminent men had been taken on the subject, but the twins did not dream of being separated. They are married and have nine children, all grown up. From a medical point of view there was little of interest in the twins; the chief point of interest consisting in ascertaining the point in the connecting band where they feel separately, and where conjointly. For a space of about half-an-inch in the centre of the band both feel a prick, but beyond that space each one feels separately. If they were divided they would have great difficulty in acting separately; they would also have great difficulty in walking without their accustomed mutual support. If either of them were to die there would be time to separate them without injury to the living one. At present, however, they would strongly object to be separated; one reason for which was that the separation would take away their means of gaining money; it would take away their business. Dr. Beigel afterwards added, in reply to observations from Dr. Carter Blake and Mr. Dendy, that all the best medical authorities agreed that the band might be divided without danger.

The meeting was then adjourned.

March 16th, 1869.

Dr. Charnock, V.P., in the Chair.

The minutes of the former meeting were read and confirmed.

The members of the Society elected since the last meeting were announced as follows:—

Fellows.—J. S. Thresh, Esq., B.A., Old Palace, Richmond, S.W.; Henry Hertz, Esq., 27, Fenchurch Street, E.C.

Local Secretary.—Frank W. Breach, Esq., for Sonora, Mexico.

The following presents were announced to have been made, and thanks were given to the donors:—

FOR THE LIBRARY.

From the Author.—L'Homme Fossile en Europe, Histoire Complète de la grande éruption du Vesuve en 1681.

From the Association.—Papers relating to the Geologists Association.

From the Society.—Transactions of the Ethnological Society of London.

From the Author.—Wassergehalt des Gehirns. By Dr. A. Weisbach.

From Dr. H. Beigel.—Zur Lehre vom Milzbrand beim Menschen, by Dr. Beigel; Moderne Missionare, by E. Hartenfels; Memoranda der Speciallen Physiologie des Menschen, by J. Budge; Platonis Opera, 5 vols.—Les Institutions Sanitaires pendant le conflit Austro-Prussien, La Commission des Etats, Essais d'hygeine therapeutique—T. W. Evans; The Medical Quarterly Review, 4 Nos.